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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TUROCY, DAVID P

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/827,174

Applicant(s)

YOSHIDA ET AL.

Examiner

David Turocy

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/19/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawing is not properly labeled as Fig. 1. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

2. Claims 1 and 13 are objected to because of the following informalities:
- a. Claims recite, "for 5 seconds or less", however, it is unclear what process is being done for 5 seconds or less. For the purposes of applying prior art, the examiner interprets the application of lubricant to be for 5 seconds or less.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3-5, 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/64544 by Imai et al ("Imai").

Claim 1: Imai teaches of a applying a lubricant composition for plastic working of metals by first cleaning the metal, then contacting the metals with an aqueous lubricious film formation treating solution which contains at least one kind of inorganic salt and at least one kind of lubricant, and finally dried after application of lubricant (abstract, page 12, lines 31-36, Page 13 lines 6-8). Imai discloses the lubricant composition can be used as the lubricant that is employed during the cold plastic working e.g., wire drawing, pipe drawing, forging (Page 12, lines 25-28). Imai discloses an inorganic salt with a weight percent of 3%-8% and a lubricant weight percent of 3-5%, which is a weight ratio of lubricant to salt within the range of 0.375-1.67 (Table 2).

Imai fails to specifically teach cleaning the wire rod for 20 seconds or less. However, it is the examiners position that it is within the skill of one of ordinary skill in the art to determine the optimum value for a cleaning process. Fast enough for the process to produce an acceptable amount of cleanness in order to produce usable product, but not too slow as to cause an economic loss due to over cleaning. One of ordinary skill in the art at the time of the invention would recognize cleaning of metal prior to lubrication in cold plastic working requires a small amount of time. Therefore, it would have been obvious to one having ordinary skill in the art to have determined the optimum time of cleaning through routine experimentation. See *In re Aller*, USPQ 233 (CCPA 1955).

Imai also fails to suggest contacting the metal wire with a lubricant for 5 seconds or less. However, Imai discloses a lubricant composition that prefers a simple application process consisting of immersion or spraying (Column 2, lines 57-60). While the examiner acknowledges that the examples show an immersion time of Imai of 30 seconds, these showings are merely exemplary and are not limiting. It is the examiners position that it is within the skill of one of ordinary skill in the art to determine the suitable lubrication time to properly coat a metal in cold plastic working to provide sufficient lubrication for the process. Therefore, it would have been obvious to one having ordinary skill in the art to have determined the optimum lubrication time through routine experimentation in the absence of a showing of criticality. See *In re Aller*, USPQ 233 (CCPA 1955).

Claim 3: Imai teaches of at least one inorganic salt selected from the group consisting of phosphate, sulfate, borate, silicate, molybdate and tungstate (Page 8, lines 4-6).

Claim 4: Imai teaches of at least one kind of lubricant selected from the group consisting of metal soap, wax, polytetrafluoroethylene, molybdenum disulfate and graphite (Page 9, lines 4-19).

Claim 5: Imai discloses a post-coating, post-drying film coating weight afforded by the invention composition is preferably at least 1 g/m^2 from the standpoint of preventing seizure, but preferably does not exceed 30 g/m^2 based on cost considerations. A more preferred range is from 5 to 20 g/m^2 , while an even more preferred range is from 8 to 15 g/m^2 (Page 13, lines 10-14). Imai discloses an inorganic salt with a weight percent of 3% and a lubricant weight percent of 3%, which is a weight ratio of lubricant to salt of 1 (Table 2, example 5).

Claim 8: Imai discloses that a nonionic, anionic, amphoteric, and cationic surfactants can be added when a surfactant is required (Page 11, lines 13-15).

Claim 11: Imai discloses lubricant composition according to the present invention can be used as the lubricant that is employed during the cold plastic working (e.g., wire drawing, pipe drawing, forging) of metals such as iron, steel, copper, copper alloys, aluminum, aluminum alloys, titanium, and titanium alloys (Page 12, lines 25-28).

6. Claims 1-6, 8-11, 13-14, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/64544 by Imai et al ("Imai") in view of US Patent 4688411 by Hagita et al ("Hagita").

Imai is applied here for the same reasons as applied above in the 35 USC 103(a) rejection. However, Imai fails to teach of a method for manufacturing a metal wire rod, having any diameter, using a continuous inline system comprising cleaning, by pickling, shot blasting or roll bending, preheating the metal rod, and contacting the metal wire with a lubricant for 5 seconds or less.

Claim 1: While it is the examiners position that it is within the skill of one of ordinary skill in the art to optimize the lubrication time as discussed above. Hagita is applied here to show known and conventional application times. Hagita teaches a method for preparation of the metal wire rod by continuous inline system comprising, carrying out cleaning treatment, contacting with aqueous lubricating film formation treating solution, and drying immediately and forming lubricious film (Figure 1, Column 4, lines 37-59). Hagita discloses a normal lubrication treatment time of 2-3 seconds (Column 6, lines 35-36). In addition, Hagita discloses carry out the wire drawing operation efficiently in a shorter period of time (Column 2, lines 46-48).

Claims 2,13, 17-18 and 20: Hagita teaches a step of preheating the metal wire rod prior to contacting with the aqueous lubricating coating (Figure 1, Column 4, lines 37-59).

Claims 6 and 14: Hagita discloses a metal wire with a diameter of 5.5 mm (Column 8, Examples).

Claims 10 and 19: Hagita discloses the method of descaling the wire during an in-line process can be accomplished by any of pickling, shot blasting and roll bending (Column 4, lines 60-65).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Imai to use the wire drawing process of cleaning, preheating, rinsing, lubricating, and drying suggested by Hagita to provide a desirable manufacture of metal wire rod for use in plastic working because Imai teaches a lubricant can be employed during cold plastic wire drawing but fails to disclose process parameters for such a process and Hagita teaches a known method for wire drawing.

7. Claims 7,12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/64544 by Imai et al ("Imai") taken in view of US Patent 4688411 by Hagita et al ("Hagita") alone or when further taken in view of US Patent 5282377 by Illig et al ("Illig").

Imai and Hagita are applied for the same reasons set forth in the 35 USC 103 (a) rejection above. Hagita discloses a wire drawing speed of 80 m/mm (Column 9, line 2). It is the examiners position that the units of m/mm appear to be a typographical error. The examiner believes the units are more reasonably m/min. The examiner believes that a fair suggestion of this reference to one of ordinary skill in the art would be m/min.

Art Unit: 1762

It is within the skill of one of ordinary art at the time of the invention to regard the line drawing speed of 80 m/mm to be 80 m/min, because it is the within the skill of one of ordinary skill in the art that speed has units of length/time.

While the examiner maintains his position that m/mm is really m/min, Illig has been applied to disclose known wire drawing speeds. Illig, teaching of a similar method for applying a lubricant during a wiring drawing process, discloses line speed of 35 m/min to 75m/min (Column 6, lines 66-67). Illig also discloses that the wire line speed is a cause effective variable with respect to the weight of the lubricant applied (Column 6, lines 58-62, Figure 5). Therefore, since wire drawing speeds are known in the art to be in the order of 75 m/min, one of ordinary skill in the art would consider a wire drawing speed of 80 m/mm to more reasonably be 80 m/min.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1762

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy
AU 1762


KATHERINE BAREFORD
PRIMARY EXAMINER